



## Consistent lighting concept as a common thread within a diverse exhibition landscape

### ERCO LED lighting solutions at Deutsches Museum, Munich

Deutsches Museum is Europe's largest indoor museum for technology and natural sciences; with around one million visitors a year, it is also Germany's most visited museum. The main building on Munich's Museum Island has been undergoing extensive renovation for several years. This also includes a new lighting concept that connects all areas. On some 20,000 square metres in the recently opened Phase 1, visitors can now explore 19 newly designed exhibition areas on a variety of topics. ERCO LED spotlights showcase the diverse and impressive exhibits within the varied architecture.

#### Project data:

Project:	Deutsches Museum, Munich / Germany
Exhibition planning, design of lighting concepts:	neo.studio, Berlin / Germany, Büro Müller-Rieger GmbH, Munich / Germany, Team Thöner Ausstellungen GmbH i.G., Augsburg / Germany
Lighting design:	Prof Michael Schmidt, Bruckmühl / Germany
Photography:	David Schreyer, Wörgl / Austria

The stated goal of the museum, which opened in Munich in 1925, is to present scientific and technical knowledge to interested laypersons in an understandable and lively manner. It illustrates the historical development of science and technology and their significance for technical and societal advancement through selected examples. After almost a hundred years, Deutsches Museum was in urgent need of renovation; among other issues, fire protection, escape routes and air conditioning were outdated.

By 2028, the entire building is to be made fit for the future. The first construction phase, encompassing half of the collection building, has now been completed. All rooms in this part of the building have been completely renovated, and all exhibitions within have been partly renewed, partly newly created, and adapted to today's requirements. This also includes a contemporary, energy-efficient lighting concept with a formally uniform appearance, different light distributions and lumen packages with the same housing and design, excellent colour rendering and DALI capability.

"The old lighting had aged", explains lighting designer Michael Schmidt. "Since Deutsches Museum has continuously grown over decades, each exhibition area was equipped with lighting fixtures that corresponded to the technical standards of their respective times."

The lighting systems were only modernised sporadically; the museum operation had to keep a large number of replacement luminaires and lamps on hand in case of luminaire failures.

## **An overarching lighting concept unifies the multitude of different spatial situations and exhibition concepts**

From agriculture to aerospace, from health to robotics, from electronics to atomic physics: the themes of the individual exhibition areas within this mammoth museum are not only very diverse; the rooms themselves could hardly be more different from each other. There are smaller and larger rooms, low and extremely high rooms with ceiling heights ranging from around three to nine metres, some with sloping ceilings or side niches, rooms with high natural light exposure, and those with no natural light at all. Additionally, various planning offices have developed individual exhibition concepts for the different thematic areas.

**How do you summarise this (interior) architectural diversity with a suitable lighting solution?** "With a consistent lighting concept", says lighting designer Prof. Michael Schmidt succinctly. "And with the consistent choice of a particularly versatile LED spotlight from ERCO that provides all the necessary light distributions and illumination levels in a uniform design."

The planning is based on [track lighting](#) in a support structure, which was designed like a grid for the entire building and aligns with the architecture. This lighting infrastructure accommodates all functions – general lighting with downlights for museum operations, set-up, cleaning and security lighting – as well as the actual exhibition lighting.

**"Due to the high requirements for the basic lighting, it made sense to use the existing structures for the power tracks,"** says the designer. "The support structure is integrated into the building depending on the interior architecture and coordinated with the building services."

## **Optec from ERCO: An economical LED spotlight family with a huge bandwidth and high flexibility**

Around 1500 [Optec spotlights](#) from ERCO were installed in this regular grid of support tracks with integrated [track lighting](#), some recessed into the ceiling but mostly suspended at a height of about 3.5 to four metres. Different wattages were used for various room heights and daylight situations, with some in warm white (3000K) and others in neutral white (4000K) – depending on the curators' preferences for the individual exhibitions. Thanks to interchangeable Spherolit lenses, different exhibits such as engines, machines or joints can be optimally illuminated. **"Optec from ERCO is a product range that impresses with its high flexibility and versatility, all at a reasonable price,"** says the lighting designer.

After the installation of all the lights, he personally took charge of positioning each spotlight on-site and optimally aligning them.

**"In areas with abundant daylight, we decided in coordination with the exhibition planners to use high illuminance levels – for example, in the modern aviation section, where huge window openings resemble the gates of a hangar."** From a conservation perspective, there was no objection to illuminating the exhibits with high illuminance levels. **"Overall, we have created a bright impression in the museum – resulting in light, bright, friendly rooms with high quality of stay and many views of the surrounding urban space and the Isar river encircling the museum island,"** explains the lighting designer.

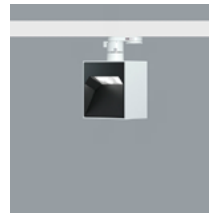
## **ERCO Greenology: Sustainable lighting with energy-efficient, long-lasting luminaires**

The [ERCO Greenology](#) approach for sustainable lighting is based on the precise light control of spotlights, which avoids stray light and thus energy waste. Professor Michael Schmidt teaches Energy Efficient Design at the Faculty of Architecture and Civil Engineering at Augsburg University of Applied Sciences. Energy-efficient planning and building, especially concerning lighting, is particularly important to him in his own projects. The lighting technology developed in-house by ERCO projects the light precisely onto the target area. Compared to other optics, a lower connected load is sufficient to achieve the same illuminance. In addition to the efficiency of the LED spotlight (lm/W), the result is particularly [effective lighting](#) (lx/W). To keep not only energy costs but also maintenance effort as low as possible, the [longevity of the luminaires](#) is a decisive factor in museum operations. ERCO luminaires, thanks to advanced technology, robust components and in-house developed optoelectronics, are designed for long-term operation.

## Luminaires used in the project



Optec



Pantrac



Stella



Skim

## About ERCO

ERCO is an international specialist for high-quality and digital architectural lighting. The family-owned company, founded in 1934, operates globally in 55 countries with independent sales organisations and partners.

ERCO understands light as the fourth dimension of architecture – and thus as an integral part of sustainable building. Light is the contribution to making society and architecture better and, at the same time, preserving our environment. ERCO Greenology® – the corporate strategy for sustainable lighting – combines ecological responsibility with technological expertise.

At the light factory in Lüdenscheid, Germany, ERCO develops, designs and manufactures

luminaires with a focus on photometric optics, electronics and sustainable design. The lighting tools are developed in close collaboration with architects, lighting designers and electrical designers. They are used primarily in the following applications: Work and Culture, Community and Public/Outdoor, Contemplation, Living, Shop and Hospitality. ERCO lighting experts support designers worldwide in transforming their projects into reality with highly precise, efficient and sustainable lighting solutions.

If you require any further information on ERCO or image material, please visit us at [www.erco.com/press](http://www.erco.com/press). We can also provide you with material on projects worldwide for your media coverage.

**Copies and links requested.**

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